

**ACILEPIDOPSIS, A NEW GENUS OF VERNONIEAE FROM
SOUTH AMERICA (ASTERACEAE)**

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ABSTRACT

A new genus, *Acilepidopsis* is proposed as a segregate from *Vernonia*. The new genus contains a single species, *Acilepidopsis echitifolia* (Mart. ex DC.) H. Robinson.

KEY WORDS: Asteraceae, *Acilepidopsis*, *Vernonia*, systematics.

Recent studies aimed at the removal of the American *Lepidaploa* complex from the overly broad concept of the genus *Vernonia* (Robinson 1987a; 1987b; 1988a; 1988b; 1988c) have revealed that the South American *Vernonia echitifolia* has pollen of a type not otherwise known in *Vernonia sensu stricto* outside of the Eastern Hemisphere. Additional distinctions in the glands, the stem base and the style base of the species indicate the need for a separate genus that is named herein as *Acilepidopsis*.

The species that has been known as *Vernonia echitifolia* Mart. ex DC. from northern Argentina, southern Bolivia, southern Brazil and Paraguay, has pollen of the form called Type E by Jones (1981). Such pollen is not otherwise known among the American species that have been placed in the broad concept of *Vernonia* Schreb. The pollen further points to the possibility that the species is more closely related to elements that have been placed in *Vernonia* in the Eastern Hemisphere than to other groups in America. Chemical and cytological data are not available at present, but should be sought because these are different in the Eastern and Western Hemisphere groups in *Vernonia sensu lato* (Jones 1977).

The lack of chemical and cytological evidence does not prevent the distinction of the species on the basis of other characters. *Vernonia echitifolia* might be related to African species such as *V. polysphaera* Baker that have the same type of pollen. Jeffrey (1988) has listed the latter species in his *Vernonia* group 3, subgroup C, for which various potential older generic names are listed, *Acilepis* D. Don, *Xipholepis* Steetz in Peters and *Lycistemma* Steetz in Peters, all of which are typified by species from India or Nepal. The African species,

and the type of the oldest generic segregate, *Acilepis squarrosa* D. Don, have been compared with *V. echitifolia* and are different enough in other characters to justify separate generic status from even those Eastern Hemisphere species.

The two characters emphasized in the present distinction of the genus *Acilepidopsis* are the glands on the achenes and corollas and the form of the stem base. The large red glands were mentioned by Cabrera (1944) in a key to the species. They are numerous, red and large, over 100 μm across the cap. The caps have only two cells, but they are often wrinkled and seem to have more. The chemical contents seem to leak out in an unusual way in preparations and the chemistry would be of interest for that reason alone. The glands densely cover the achenes and corollas, the upper outer surfaces of the involucre bracts and they occur thickly on both surfaces of the leaves.

The base of the stem forms from an upward turning end of a branched creeping rhizome. The creeping part is densely covered with roots, and the upward turn is gradual with only a slight change in diameter. The South American and African plants with which the species has been compared in this study have stems usually arising from underground tubers. The latter usually break off at the ground surface when collected, and they also evidently often occur in clusters. The habitat of *Acilepidopsis* is described as near streams or on moist hillsides and the plant bases seem to reflect habitats with moist soils. The South American and African Vernoniaceae with which the species has been compared in this study are evidently specialized for savanna habitats with drier soil.

Gleason (1923) keyed the species as having corolla lobes densely pubescent within. No specimen seen in this study shows such pubescence. However, there are numerous slender hairs on the distal outer surface of the corolla lobes.

The style bases of *Acilepidopsis* are only slightly thickened with no sclerified cells at the base. There is no differentiated node. Such bases occur in a few genera of the Brazilian area such as *Lessingianthus* H. Robins., *Chrysolaena* H. Robins. and *Stenocephalum* Sch.-Bip., but most genera compared with *Acilepidopsis* in the present study have distinct partially sclerified nodes of varying size such as *Lepidaploa* (Cass.) Cass., *Acilepis* and *Vernonia*. The character varies within related groups but the variations are usually rare enough to be useful in generic distinction. The latter seems to be the case in *Acilepidopsis*.

From the most likely African and Asian relatives, which fall under the concept of *Acilepis*, *Acilepidopsis* differs by the glands, the style bases and the stem bases. It also differs by the complex inflorescence having many remotely seriate cymose branches with small foliose bracts. The paleotropical *Acilepis* further differs by having heads in small terminal or axillary clusters on the main leafy stems.

Acilepidopsis differs from *Vernonia sensu stricto* by the lophate, non colpate pollen, the bracteolate seriate cymose inflorescence and the large red glands. It remains to be seen whether it also differs by the chromosome num-

ber and chemistry as do other species with Type E pollen. Examination of eastern North American species of *Vernonia*, including the type species, *V. noveboracensis* (L.) Michaux, shows stem bases that arise from procumbent tips of rhizomes somewhat like *Acilepidopsis* but not as gradual or as densely covered with roots.

The name for the new genus is derived from that of the probable paleotropical relative *Acilepis* D. Don.

Acilepidopsis H. Robinson, *genus nov.* TYPE: *Vernonia echitifolia* Mart. ex DC.

Plantae herbaceae vel suffruticosae ad 1.0-1.3 m altae. Caules ex rhizomatibus procumbentibus sensim erecti subtiliter multo costati. Folia alterna distincte breviter petiolata; laminae ellipticae vel oblongae margine remote mucrono-denticulatae apice obtusae supra et subtus dense rubro-glandulo-punctatae et plus minusve pilosulae. Inflorescentiae terminales pinnate ramosae, ramis laxe seriate cymosis, bracteis foliosis capitulis subtentis superne descrescentibus in ramis 5-10 mm longis. Capitula in axilibus bracteorum plerumque solitaria sessilia persistentia, bractee involucri ca 30 valde inaequales graduatae ca 4-seriatae 2-6 mm longae base minute ovatae superne sensim anguste oblongae apice breviter acutae vel argute apiculatae. Flores in capitulo 8-13; corollae base tubulosae in faucibus campanulatae in faucibus et lobis dense rubro-glanduliferae, lobis sub anthesi reflexis distaliter sericeo-pilosulis; thecae antherarum base breviter sed distincte appendiculatae; appendices apicales antherarum glabrae; basi styliorum vix crassiores sine cellulis scleroideis. Achaenia 10-costata dense rubro glandulifera non vel vix breviter setulifera, raphidis minutis indistinctis breviter rhomboideis, cellulis aliquis superficialibus mammosis in seriebus 1-3 sparsis; carpodia turbinata, cellulis breviter oblongis in parietibus porose incrassatis; setae pappi interiores capillares densae ca 100 albae facile deciduae distaliter non latiores, squamae pappi exteriores ca 0.8 mm longae lineares. Grana pollinis in diametro 55 μm lophata [type E, (Jones 1981)] tripinata in partibus omnibus areolata non colpata.

The genus contains the following single species.

Acilepidopsis echitifolia (Mart. ex DC.) H. Robinson, *comb. nov.* BAsIONYM: *Vernonia echitifolia* Mart. ex DC., Prodr. 5:60. 1836.

Vernonia ararana Gardn., Lond. J. Bot. 5:227. 1846.

LITERATURE CITED

- Cabrera, A.L. 1944. *Vernonieas Argentinas* (Compositae). *Darwiniana* 6:265-379; pl. 1-35.
- Gleason, H.A. 1923. The Bolivian species of *Vernonia*. *Amer. J. Bot.* 10:297-309.
- Jeffrey, C. 1988. The Vernonieae in East Tropical Africa. *Kew Bull.* 43:195-277.
- Jones, S.B. 1977. Chapter 17. Vernonieae-systematic review. In V.H. Heywood, J.B. Harborne & B.L. Turner, eds., *The Biology and Chemistry of the Compositae*. 1:503-521.
- . Synoptic classification and pollen morphology of *Vernonia* (Compositae: Vernonieae) in the Old World. *Rhodora* 83:59-75.
- Robinson, H. 1987a. Studies in the *Lepidaploa* Complex (Vernonieae: Asteraceae). I. The genus *Stenocephalum* Sch. Bip. *Proc. Biol. Soc. Wash.* 100:578-583.
- . 1987b. Studies in the *Lepidaploa* Complex (Vernonieae: Asteraceae). II. A new genus, *Echinocoryne*. *Proc. Biol. Soc. Wash.* 100:584-589.
- . 1988a. Studies in the *Lepidaploa* Complex (Vernonieae: Asteraceae). IV. The new genus, *Lessingianthus*. *Proc. Biol. Soc. Wash.* 101:929-951.
- . 1988b. Studies in the *Lepidaploa* Complex (Vernonieae: Asteraceae). V. The new genus, *Chrysolaena*. *Proc. Biol. Soc. Wash.* 101:952-958.
- . 1988c. Studies in the *Lepidaploa* Complex (Vernonieae: Asteraceae). VI. A new genus, *Aynia*. *Proc. Biol. Soc. Wash.* 101:959-965.